PROJECT FACT SHEET

CONTRACT TITLE: Long Term Performance of Vertical Caverns Filled with Solid Waste

ID NUMBER: FEW 7912

B&R CODE: AB0555000

CONTRACTOR: Sandia National Laboratory

ADDR:
P.O. Box 5800, MS 1033
Albuquerque, NM 87185-1033

DOE HEADQUARTERS PROGRAM MANAGER:
NAME: William H. Hochheiser
PHONE: 202/ 586-5614

DOE PROJECT MANAGER:
NAME: John K. Ford
LOCATION: NPTO
PHONE: 918/ 699-2061
E-MAIL: jford@npto.doe.gov

CONTRACT PROJECT MANAGER:

NAME: James E. Linn
PHONE: 5058446313
FAX: 505/ 844-0240
E-MAIL: jklinn@sandia.gov

PROJECT SITE
CITY: Albuquerque **STATE:** NM
CITY: **STATE:**
CITY: **STATE:**

CONTRACT PERFORMANCE PERIOD:
9/15/1998 to 9/14/1999

PROGRAM: Environmental-Gas
RESEARCH AREA: Environmental
PRODUCT LINE: EEP

FUNDING (1000'S)	DOE	CONTRACTOR	TOTAL
PRIOR FISCAL YRS	80	0	80
FISCAL YR 1999	0	0	0
FUTURE FUNDS	0	0	0
TOTAL EST'D FUNDS	80	0	80

OBJECTIVE: Provide an understanding of the importance of the mechanical properties of the waste on the salt creep rates and final cavern configuration.

PROJECT DESCRIPTION:

Background: This work addresses the long term response of a vertical cylindrical salt cavern, 50 m in diameter and 600 m in height, and filled with granular waste (spheres) and saturated brine. Sandia National Laboratories will assume typical salt creep properties of gulf coast domal salts and an initial pressure equal to hydrostatic pressure. Sandia will look at a range of mechanical properties of the waste, and assume salt will be treated as a non-permeable material. A 2-D axisymmetric code with the M-D salt Constitutive model will be used.

Work to be Performed: This work will provide an understanding of the importance of the mechanical properties of the waste on the salt creep rates and final cavern configuration. Time response in pressure and shape will be documented, along with stability of the salt surrounding the cavern.

PROJECT STATUS:

Current Work: Work is ongoing on the physical characterization of wastes that are candidates for emplacement into salt caverns. The necessary salt creep code is ready for use. Work is currently focused on the physical characterization of granularized waste.

Scheduled Milestones:

Models for solid waste characterization completed	10/98
Permeability model incorporation	11/99
Cavern modeling using permeability enhancement	02/00

Accomplishments: The models were ready, and waiting physical characterization of waste forms. Work was initiated on the waste characterization in early 1999. In April 1999, industry funded work of a near duplicate nature was presented by Dr. Robert Thoms, AGM, Inc. at the Spring Meeting of the Solution Mining Research Institute. This work was done in support of an industry permit application to the TNRC for disposal of solid wastes in Boling Dome, near Houston. It was concluded that duplication of the Thoms work was not useful, but that modeling of caverns using the permeability enhancement expected from the Ecole Polytechnic laboratory results would be much more useful, and extend the knowledge of long term disposal/dilt interactions. Ecole Polytechnic has just recently made sufficient information available to proceed in this direction. It is estimated that it will take approximately four months to complete the work.